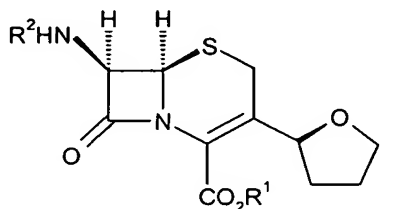


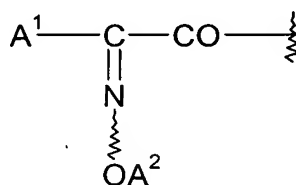
# **COUPLING PROCESS AND INTERMEDIATES USEFUL FOR PREPARING CEPHALOSPORINS**

## **Abstract of the Invention**

This invention relates to a novel process for the preparation of 3-cyclic-ether-substituted cephalosporins of formula I



wherein the group CO₂R¹ is a carboxylic acid or a carboxylate salt and R² has the formula:

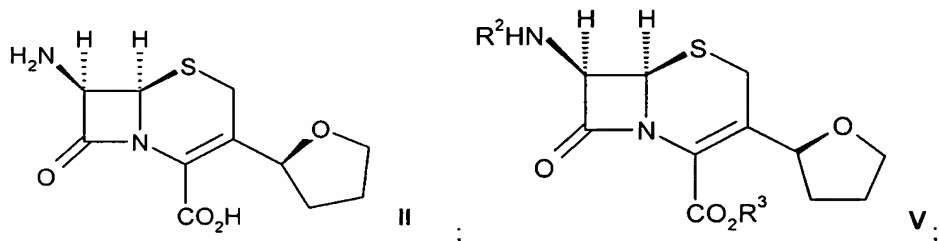


wherein

A¹ is selected from the group consisting of C₆-₁₀aryl, C₁-₁₀heteroaryl and C₁-₁₀heterocyclyl;

A² is selected from the group consisting of hydrogen, C₁-₆alkyl, C₃-₁₀cycloalkyl, C₆-₁₀aryl, C₁-₆alkyl(CO)(C₁-₆)alkyl-O-, HO(CO)(C₁-₆)alkyl, mono-(C₆-₁₀aryl)(C₁-₆alkyl), di-(C₆-₁₀aryl)(C₁-₆alkyl) and tri-(C₆-₁₀aryl)(C₁-₆alkyl);

from a zwitterionic compound of formula II; or from a compound of formula V:



wherein R² is as defined above and R³ is para-nitrobenzyl or allyl.

The invention also relates to the preparation of the above compounds of formulae II and V.